

WILLIAM ROWAN BROWNE, 1884-1975

(Memorial Series No. 24)

William Rowan Browne, FAA, doyen of Australian geologists, died at the Scottish Hospital, Sydney, on 1st September 1975, following a heart-attack suffered that morning at his home in Edgecliff. He had come to this country seventy-one years before, a young man making desperate search for relief from the chronic ill-health that seemed to promise an early grave. Australia helped defer that promise yet death still came to rob, and to leave unfinished the course Browne had set. If latterly, impaired hearing and sight troubled him as did "a locomotion not what it used to be", in mind he remained vigorous to the end. His regimen of thought and writing continued unabated until the last days of August. What he saw as a "remission of sentence" was repaid in a life devoted to the service of his adopted country. That dedication brought a contribution to Australian science that defies adequate expression in a brief memoir. But how better to try than by following the royal advice in *Alice in Wonderland*, a source highly esteemed by our subject: "Begin at the beginning, . . .".



Browne's parents kept the National School in the townland of Lislea, near Kilrea in Co. Derry. There he was born 11th December 1884, the sixth in a family of eight children. From the local school young Browne moved on to the Academical Institution at Coleraine. With first place for the whole of Ireland at matriculation and a collection of prizes he went up to Trinity College Dublin, in October 1903, intent on following a classical arts course, but the onset of tuberculosis forced him to withdraw without completing a term. It was the first in that set of curious chances whereby Browne came to Australian geology.

Medical opinion at the time favoured travel to "healthy" climes as appropriate advice for consumptive patients, though as one authority admitted in the *Encyclopaedia Britannica* many were sent off merely to die. As a last chance Browne was urged to take a long sea-voyage and accordingly in February 1904 set out for Australia. The disease had advanced considerably by the time he reached Sydney but after five months in a private sanatorium at Leura his health, remarkably, was improved to the extent that he could leave and take on light duties coaching a student at Inverell. Later he moved to a grazing property near Goulburn as tutor to the owner's children. At Wollagorang, Browne learned to ride and to love the open spaces of Australia. Towards the end of 1906 he was deemed fit enough to settle in Sydney and resume studies. Shares in both the classical and mathematical scholarships offered by the university came his way at the honours matriculation of 1906.

He had intended to continue with greek, latin and mathematics at university but was urged by a friend to consider a science course. To our lasting

benefit, the advice was taken. That Browne became a geologist was an equally happy chance. Rules for the B.Sc. degree required candidates to read fairly widely in the natural sciences. Browne knew nothing of geology but chose it as a fourth subject for no deeper reasons than that the professor (Edgeworth David) had a good reputation among students and the excursions were said to be fun. The new recruit responded by taking both prizes awarded for Geology I. He chose to continue and thus came into close contact with W. G. Woolnough who had to run the department when the professor went absent-without-leave in Antarctica for a year (1908). Browne's success at examinations ran on to final honours (then taken at the end of third year); he graduated early in 1910 with firsts in both geology and mathematics, sharing the University Medal for geology with A. B. Walkom.

If Browne had taken all the prizes on the way, Walkom beat him to the one that then mattered, a junior demonstratorship in the Sydney department. Browne had to look elsewhere and, as the mathematical course included lectures in astronomy, managed to secure the place of assistant at the Adelaide Observatory. The work was routine but, to judge from the stories he told of those days, Browne found it tolerably diverting. But he was far from dismayed early in 1911 to receive an offer from Sydney of the junior demonstratorship just vacated by W. N. Benson.

Back in Sydney, Browne joined forces with Walkom to complete his first paper for publication, a study of the rocks at Pokolbin, first seen by both during an excursion in 1907. The work was hardly finished when he accepted an invitation to return to Adelaide, to teach mineralogy and petrology at the University as substitute for Douglas Mawson, who was then about to re-visit Antarctica. Browne spent 1912 at the University of Adelaide and proved his value as a teacher by sparking the interest of at least one student; this young man, C. E. Tilley, eventually followed Browne back to Sydney there to take a degree with two University Medals. For some years a member of our society and once interested in a Macleay Fellowship, Tilley went on to become Professor of Mineralogy and Petrology at Cambridge. The two men remained firm friends, a friendship broken by Tilley's death in 1973. News of that event elicited a characteristic response: "When I was a lad I thought Queen Victoria would live for ever, but she let me down; then I thought Tilley would but now he has done the same!" Grief for Browne was a private matter, something to be parried lightly, not shared, with others.

Browne returned to Sydney early in 1913 after a spell of field-work on the granites and metamorphic rocks at Victor Harbour. In that year Woolnough left for the foundation chair of geology at the new University of Western Australia, his place in Sydney being filled by L. A. Cotton. Browne, in turn, was promoted to the tenured post of assistant lecturer. Three years later he became lecturer, and in 1923 acquired the title of assistant professor. He was wont to claim that this unusual distinction came to all lecturers at Sydney who had completed ten years of blameless service but one can think of others at the time not so treated. Be that as it may, he became known, to his face, as Prof. Browne; behind his back he continued as none other than Buster Browne, incarnation of a hero of popular literature. He knew his nickname, indeed was proud of it, but one suspects the formal handle must have softened a little the blow when, in 1924, he was passed over in favour of the older, blander L. A. Cotton for the chair from which David had just retired. Browne served Cotton and his successor with utter loyalty though there must have been many occasions when he chafed under government by men whose achievements in science were so inferior to his own. Browne retired from the university with the rank of reader late in 1949, the occasion being marked officially by no more than a letter enquiring how he wished his pension paid. That was as far as Browne

let himself be drawn; if he felt disgust, he kept it private. Certainly it did not deter him from later giving a considerable amount of unpaid service to the university Archives, mainly in connection with organizing the David papers.

Traversed thus, the record is unexceptional, a pattern repeated by others who failed to reach the top. But Browne only failed in the little world of university administrations; the freer, more demanding world of student and professional science made amends. There the range and quality of his research and scholarship were fully recognized. He it was who succeeded Edgeworth David as Australian geologist extraordinary; he would have wished no greater fame. Likewise, he acknowledged no greater debt than that to David. Only in the earliest period of Browne's research was there another pervasive influence, that of Woolnough, in many ways really David once-removed.

From Woolnough, Browne acquired his interest and skill in petrology, the subject he was to teach for many years and to enlarge with many notable papers. His early work at Cooma, an area to which Woolnough had introduced him, yielded in 1914 a landmark among Australian metamorphic studies. Schists and gneisses were then still regarded traditionally as geologically ancient. By careful mapping Browne showed that part at least of the metamorphic complex at Cooma was no older than late Ordovician. Thirty busy years passed before the second part of the Cooma study appeared, a fact in its own way revealing. Browne worked carefully, without haste to publish; his papers required no corrigenda.

Metamorphic studies at Broken Hill, undertaken in collaboration with the N.S.W. Geological Survey, led to a thesis on *The Petrological Evolution of the Wilyama Complex* for which Browne received a Sydney D.Sc. with University Medal in 1922. Other works of a petrographic nature followed in that decade, on metamorphic and igneous material such as the monzonite from Kiandra that became a favourite with which to confront students at examinations. The Kiandra study was one of a number issued under joint authorship but in fact conceived and written by Browne, the second author being an analyst at the Mines Department. Although Browne had performed a few analyses himself he had little taste for this particular form of disciplined drudgery. It mattered more to him that he knew how to handle chemical data.

Other petrological investigations arose from the context of stratigraphical work. David's discovery in 1914 of glacial evidence at Seaham induced Browne, and others, to examine problems of late Palaeozoic glaciation and stratigraphy. With these studies Browne also resumed the work on late Palaeozoic eruptive rocks begun at Pokolbin. The phenomenon of secondary mineral-adjustment in these volcanic materials kept his interest for some years and led also to studies of alteration in the Prospect intrusion near Sydney and in Permian lavas at Port Kembla. With the advantage of hindsight it may seem strange that Browne, a man acutely conscious of geological relations, should have failed to recognize the fact that the sedimentary rocks associated with the altered lavas were themselves altered in kindred fashion. But the potential of sedimentary petrology was not realized when Browne tackled these problems of secondary alteration. Sediments and igneous rocks still kept their separate places, with only the latter being brought to the microscope. Browne's adoption of the model of endogenous alteration in the igneous bodies, a concept then being advanced overseas, at once shows his close awareness of scientific progress and a certain failure to question beyond the bounds of convention. Browne was no radical; his strength lay in a capacity for careful observation and an extraordinary skill at drawing together in a critical way diverse strands of information.

The skill that impressed David sufficiently to entrust Browne with the task of realizing his last great scheme for Australian geology became apparent first in

the valuable reviews Browne prepared as secretary to research committees of AAAS. Their range, from matters of late Palaeozoic stratigraphy to metamorphic correlation, is as remarkable as their penetration. More than mere surveys of literature, these essays are illumined by original information and matching thought. Nowhere was the style better exemplified than in the presidential addresses offered our society in 1929 and the Royal four years later. The address of 1929 drew a coherent picture of the connections between crustal movements and igneous action to the end of Palaeozoic time in what is now New South Wales. If the germ of the idea came locally via E. C. Andrews and David, Browne made it his own; his synthesis depended heavily on original information. It was a topic that long attracted him, being refined and polished later for the book of 1950 and in occasional addresses. The story of igneous action was extended forward in time by the address of 1933; there the play of orogeny is less relevant and the petrological flavour more developed.

In that review of 1933 Browne recognized the existence locally of contrasted types of basaltic rocks long before notions of tholeiites and alkali basalts became fashionable. The work remains a significant source for any student of Mesozoic and Tertiary basalts in New South Wales but how widely is it recognized that Browne had found a fundamental relation with little beyond the Mull Memoir to serve as guide? He did not bother much about blowing his trumpet, at least not by way of publishing in so-called international journals; loyalty to local journals for him was a matter of principle, those ambitious young authors who sought wider fame abroad for their Australian work earned his disapproval. One small piece of Browne's work, however, continues to find a place in international text-books. It is that paper about what he insisted should be spelled *bathyliths* in which time-relations between tectonism and granite-emplacement, and the criteria whereby these relations may be established, are examined with elegant clarity.

But above all, it is for *The Geology of the Commonwealth of Australia* that Browne will be remembered even if he insisted that his part was no more than that of an assistant at first privileged to help David and afterwards honoured to be made responsible for completing the work. To Browne it remained The Professor's book, references to '*David's Geology* . . . by W. R. Browne' simply made him annoyed. Yet the plain fact is that Browne did write it; he had no real choice. Browne's versatile intelligence as much as his personal devotion to David made him the obvious assistant in a work that David had projected long before he retired. From time to time after 1924 David laboured on the book but failing health prevented the progress he wished for. Publication of the geological map and its explanatory notes in 1932 can now be seen as David's swan-song; yet until a few months before he died in 1934, David could not bring himself to admit the failure that haunted him. Only then did he ask Browne to take over. That personal commission was confirmed by the N.S.W. Government late in 1935 after it had bought the "manuscript" from the David estate.

Despite Browne's close association with David's work he had no clear notion of what had been achieved. The material lay as miscellaneous notes in dozens of cardboard boxes and there was no way of knowing how long the editorial work would take, so a period of two years was agreed upon. When Browne discovered how little sustained writing there was amongst the mass of notes, the need for him to exceed the normal role of editor became as painfully clear as the inadequacy of the time set down for completion. The work dragged on beyond the period of secondment from university duties only to be interrupted further by the outbreak of war. But Browne kept writing throughout this period, having to add more and more of his own material to replace the original and now out-of-date notes; by the end of 1944 he had completed the first



draft. Then for the first time in his academic career he took sabbatical leave, to make a comprehensive revision. That done, the government committee in charge of the work arranged for him personally to deliver the typescript to the London publishers with whom David had made an agreement some twenty years before. Galleys had been checked and page-proofs were coming through when Browne returned to Sydney in May 1948 to resume teaching duties. The rest of the work, including preparation of an index, occupied his spare time. When the book finally appeared in 1950, nearly sixteen years after David's death, Browne himself was retired.

Browne had devoted almost two decades to this labour of love which stands now as a monument to two great Australians by adoption. If David alone in his time could have conceived the book it is equally certain that of his generation only Browne had the intellectual range to accomplish it. David established the broad framework; Browne provided substance to cover the bones. But it was no simple filling-out; Browne in his spare, precise prose completed those patterns David had sought. We see it, for instance, in Browne's recognition of the Benambran and Bowning revolutions in the Palaeozoic history of south-eastern Australia.

Retirement brought little change in the pace of Browne's work though he deeply regretted having to give up teaching. With the book off his hands and all too aware of how petrology had slipped from his grasp in the time he had laboured to realize David's dream, Browne turned to another field where devotion to The Professor could have full rein. To our society in 1945 Browne had given a second masterly presidential address in which he sought to organize the data of Australia's post-Tertiary history. That subject and in particular the evidence of Pleistocene glaciation at Kosciusko came to dominate his last years.

This preoccupation with Kosciusko began, indeed, before Browne had graduated from university. A visit there in 1942 revived interests dormant since the 1920s and was followed by a more extensive reconnaissance in 1946 under the auspices of a joint committee of this and the Royal Zoological Society of N.S.W. Each summer from 1951 to 1955 Browne led parties of biologists and geologists to Kosciusko on behalf of the joint committee. If his main concern was with glacial evidence, other more public matters came to share that attention. Human agencies were despoiling the landscape he loved and, importantly, destroying features significant to science. The David Memorial Lecture of 1952, commemorating one who had espoused the interests of conservation long before it became a fashionable cause, gave Browne an opportunity to advocate views on restricted use of the summit area. His proposals attracted vehement criticism from graziers and others with vested interests, but Browne kept fighting, one of the mere handful of senior scientists who felt concerned enough to become involved. Proclamation in 1962 of the primitive area at Kosciusko owed much to Browne's sustained effort as a publicist. When the joint committee ceased activity, Browne and his wife continued to work privately at Kosciusko until her failing health put a stop to the annual pilgrimages after 1965.

Controversy surrounds Browne's views on the record of Pleistocene glaciation at Kosciusko. David, years before, had presented a three-fold chronology of glaciation there and linked it to Quaternary events in other regions. David envisaged an early ice-sheet glaciation as the most extensive phase, later glacial activity being confined to carving valleys and, finally, restricted to deepening cirque-heads. Browne adopted that scheme with deep conviction and over the years proceeded to document details of the Kosciusko landscape in those terms. No one had a closer knowledge of the terrain, but his work, and in particular that part relating to what he took to be the extent of the earliest glaciation

has found little favour among geographers who argue that the influence of ice was far more limited than Browne believed. It remains to be seen who was nearer the truth.

Browne did not welcome the criticism and found it easy enough to point out weaknesses in his opponents' case. What he regretted far more was the virtual abdication by geologists of interest in geomorphology. He had kept alive the flame of physiography kindled in Sydney by David, while his students and their fellows were letting it pass to those he considered at best only half-baked geologists who ought to follow the elder Pliny's advice : *Ne supra crepidam sutor iudicaret*. The experience saddened his final years but he went out fighting, at work on a new paper dealing with yet more evidence of glaciation, and with its distribution, until a few days before his death.

Although the greater part of Browne's career was devoted to what, for want of a better term, is called pure science, he made a number of excursions into more distinctly practical science. His work as a consultant for the Warragamba Dam project, begun in 1943 in collaboration with L. L. Waterhouse, is but the most notable of these. As a result of their investigations, the site first selected was condemned and a new search (from which Waterhouse had to withdraw for reasons of health) instigated. By 1946 a satisfactory location had been found. The president of the Water Board when announcing acceptance of the consultants' advice paid tribute to the work of Browne and Waterhouse and added that their research had already saved the board some £2 million in construction costs. Browne continued his valuable association with the project until the dam was finished in 1960. Other less well-known facets of Browne's activities as an engineering geologist include extensive site-investigations for the new single-arch Gladesville Bridge in Sydney.

The generation privileged to know Browne esteems the man with the same deep respect his work commands. Those who were his students recall how he dominated the Sydney department. They turned to him as natural leader in science. The bright ones followed him into petrology which became the local field of excellence. If none followed him to become all-rounders it may have been because his own contributions made that all but impossible. Browne was the last of his tribe ; his successors are specialists.

To the beginner Browne could present a pretty daunting image. Formal in front of a class, the close attention he received may have been initially no more than a response to the stern gaze, but ere long most students found themselves captivated by the splendidly-organized material delivered in a flow of wonderful words. Browne was a master of words and if the touch of native Irish accent betrayed the source of his mastery it was one far from Blarney. A man of simple tastes and economical habits, Browne likewise was careful with words. The driest subject thus equipped, and relieved occasionally by quiet puns and anecdotes, came to life ; only twinkling blue eyes in an otherwise solemn visage acknowledged the sallies. The style, no doubt, made the "Browneisms" more memorable. There can be few of his students and associates who do not treasure their own collection of favourites.

Unlike so many stories that pass into student folk-lore, they are not so much *about* the teacher as *from* the teacher. Browne was no eccentric. The stories appeared in all sorts of contexts but perhaps the greatest number derived from field trips ; there Browne was in his element. Many students discovered for the first time on an excursion that the severity was something of a mask. Browne, in fact, could be remarkably approachable, though woe betide anyone who tried undue familiarity. It was little short of amazing how gently he treated the most preposterous stragglers. Stories heard at the camp-fire at

night, if not against the teller, would often relate the exploits of some past delinquent or of some departed colleague.

To be with Browne in the field was an educational experience and that not merely in the narrow sense of learning geology. Young Australians who brought no love of language or literature from school had the deficiency remedied in the bush through the art of conversation. They might note the learned quotations and jokes at which they laughed with more politeness than understanding and later seek out the sources. Slowly, they acquired something of what used to be called polite learning. It added to the thrill of arguing with Browne. One did not expect to prevail against such a sharp-minded, articulate opponent, but to have tried seemed reward enough. To reach checkmate and dismissal with *de gustibus non disputandum* was an achievement; to be styled *advocatus diaboli* was heady praise.

In the field Browne set a cracking pace yet nothing seemed to escape him. Although he took exemplary care with a notebook, one wondered why. He had a most extraordinary memory which applied quite as much to people and places as to literature. Localities not seen for years could be described to the last detail, and anyone seeking a particular outcrop was likely to find Browne's verbal recollection as useful a guide as a photograph or a map.

For all his tidy-mindedness Browne was relaxed in his habits. He might admire order, yet he existed in circumstances reassuringly confused. If his field-books were models of careful record, office notes might be jotted on scraps of paper. Tied or pinned in bundles they became his files. Thin-sections were packed away in an almost limitless supply of old tobacco tins. Yet Browne knew where to find things, and that was what mattered. Those files, incidentally, reveal an unexpected facet of the man who was so fluent in speech and in his published writing. Draft manuscripts covered with deletions and substitutions bear witness to the painstaking attention that lay behind what seemed like native skill. Authors who felt their manuscripts were savaged by Browne the referee can take comfort from the knowledge that he was no less exacting with himself.

Browne was the sort of man whose presence is felt in any company. Naturally reserved and unpretentious, there was no false modesty about him; he knew his abilities and was confident of them. There seemed never to be a need to raise his voice; even on those rare occasions when stirred to anger cool logic did not desert him. On committees he was admirable. He knew his mind and was forthright in giving it expression. Good manners combined with intelligence, that remarkable memory and a deep concern for precedent would usually enable him to restore order to a discussion made aimless by colleagues with greater zeal than sense. For Browne precedent was something both precious and fertile. His strength seemed to reside in a formidable grasp of his subject and great skill in reasoned argument rather than any dependence on intuitive flashes.

Browne's devoted work for various scientific organizations was a practical expression of his sense of duty. Our own society enjoyed his membership for 64 years. He joined the council in 1924 and continued to serve until 1932 when he resigned over a matter of principle—"something that at the time seemed important" was as far as he would let himself be drawn on that point. Appropriately, he returned in October 1934 to fill the place made vacant through the death of Edgeworth David. Thereafter, he continued on council until 1973 when he became our second councillor emeritus. Browne was twice president (1928-9 and 1944-5) and at a time of crisis in the society's affairs early in 1951, he came forward to offer his services as honorary secretary, an offer gratefully accepted. In that capacity he served until 1966 (and again



for a few months of 1969 in another period of difficulty), sharing responsibilities with A. B. Walkom. The latter took care of editorial business; Browne attended to the considerable amount of other secretarial work. Their devotion to the society's interests is beyond praise. But if the two men have left us utterly in their debt, the ledger is not quite blank on the other side. Browne and Walkom, who had been friends since their undergraduate days, came to share an office at Science House. There one day in the course of conversation Walkom suggested that after fifty years perhaps it was time they got on first-name terms. Browne readily agreed, but added when telling the story (with still a certain surprise at the novelty of Walkom's thought), that it was something which never would have occurred to him. William Browne and Arthur Walkom were certainly private men but they had a wonderful sense of public duty.

The Royal Society of New South Wales, which he joined in 1913, made Browne an honorary member in 1969 and handsomely acknowledged his eminence in many ways. He had been a councillor from 1929 to 1942, president in 1932-3 and for one session honorary editorial secretary. The Clarke Medal (1942), the Royal Society's own medal for distinguished service (1956) and the Clarke Memorial Lectureship (1949) stand among the honours that society bestowed on Browne. The Royal also paid him the handsome compliment of issuing volume 99 of its *Journal and Proceedings* as the W. R. Browne Volume.

For a few years Browne worked for the Australian National Research Council and for a much longer time supported ANZAAS and its predecessor AAAS. He presided over Section C (Geology) at the Hobart congress in 1949, was David Lecturer (1952) and received the Mueller Medal (1959). *The Australian Journal of Science* claimed his attention as an assistant editor. And in spite of his views on geographers' treatment of what he saw as geological problems, he maintained a lively interest in geography. He accepted a place on the council of the Geographical Society of New South Wales when it was founded in 1927 and remained a councillor until the late 1940s. In that time he twice occupied the presidential chair (1929-30 and 1948-9) and was long active on the society's research committee. Browne died an honorary member of the Geographical Society. When Australian geologists organized themselves into a society, Browne became a founding member and the second president (1955-6). The Geological Society of Australia made him an honorary member in 1957 and has now established in his memory the W. R. Browne Medal to be awarded for distinguished service to Australian geology.

In 1954 the Australian Academy of Science crowned the then far from finished career of Australia's elder statesman of geology by electing him to its fellowship. At the time and for many years after Browne was the only geologist resident in New South Wales to be so honoured. He proudly identified himself with the Academy's work and served on its council from 1957 to 1960.

As to Browne's family life, only the barest outline will be given. To do more would seem unwarranted intrusion. He was twice married. His first wife, Olga Marian Pauss, B.A., graduated in geology at Sydney and prior to her marriage in 1915 had worked as curator of the geological collections at the University. There were two daughters, Margaret Rowan and Helen Rowan. The former graduated B. Arch. (Sydney) in 1940 and now practises her profession in London. Helen Browne followed her father into science, taking a Sydney B.Sc. with first class honours and University Medal in Botany (1942). After a period of postgraduate research in botany she joined the Women's Australian Air Force. On demobilization she moved to CSIRO, Canberra. Married in 1947 to F. H. Morley, a geneticist also with CSIRO, she died tragically in December 1976. Following the death of Mrs. Olga Browne in 1948, her husband and daughters donated a sum of money to the University of Sydney for the purpose of establishing a memorial prize. The Olga Marian Browne Prize is



offered annually for proficiency in field-work during the second year course in geology.

Then in 1950 Dr. Browne married his colleague Ida Alison Brown, D.Sc., Senior Lecturer in Palaeontology in the University of Sydney. Dr. Ida Browne resigned from the University staff shortly afterwards. Both continued their active interests in research. Many scientifically fruitful years were thus shared, she helping him in the field at Kosciusko, he helping her with stratigraphical work at Yass and on the South Coast, until Dr. Ida Browne's health gave way. Her last years passed under constant medical care and the equally constant care of a devoted husband whom she survived by little more than a year.

*Singula de nobis anni praecedantur euntes.*

T. G. Vallance.

*Note :*

A list of W. R. Browne's published works is appended to the memorial article prepared for the *Records of the Australian Academy of Science*; for reasons of economy the list is not printed here. A photographic portrait of Browne will be found as frontispiece to the W. R. Browne Volume (*J. Proc. R. Soc. N.S.W.*, 99, 1966). The pen and ink portrait that illustrates this memorial was kindly prepared by Mr. L. Hay from a photograph taken by Dr. Ida Browne about 1968.